

- RF SAW Filter with Single-ended input and Single Ended Output
- 1.1 x 0.9 x 0.5 mm Surface-Mount Case
- $Z_S = 50 \text{ ohm}$, $Z_L = 50 \text{ ohm}$
- Complies with Directive 2002/95/EC (RoHS)
- AEC-Q200 Qualified

Absolute Maximum Ratings

Rating	Value	Units
Maximum Input Power	+10	dBm
Maximum DC Voltage Between any Two Terminals	3	V
Operating Temperature Range	-40 to +105	°C
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Maximum Soldering Profile	265 °C for 10 s	
Moisture sensitivity level: 1, Metal Lid		



SM1109-5H

Electrical Characteristics

Characteristic		Unit	Min.	Typ.	Max.
Center Frequency		MHz	-	1582.469	-
Insertion Loss	1574.42~1576.42 MHz	dB *(1)	-	0.95	1.5
	1565.42~1585.42 MHz	dB *(1)	-	1.5	2.0
	1597.552~1605.886 MHz	dB *(1)	-	1.4	2.3
	1559.052~1563.144 MHz	dB *(1)	-	1.7	2.8
VSWR (Input/Output)	1574.42~1576.42 MHz	-	-	1.3	2.0
	1565.42~1585.42 MHz	-	-	1.9	2.3
	1597.552~1605.886 MHz	-	-	1.5	2.5
	1559.052~1563.144 MHz	-	-	1.8	2.5
Attenuation (Reference level from dB)					
50~925 MHz		dB	32	36	-
925~980 MHz		dB	32	36	-
1427~1463 MHz		dB	32	39	-
1710~1785 MHz		dB	32	39	-
1850~1910 MHz		dB	32	38	-
1920~1980 MHz		dB	32	37	-
2401~2483 MHz		dB	32	39	-
2500~2570 MHz		dB	31	38	-
Temperature Coefficient of Frequency		ppm/°C		-36	

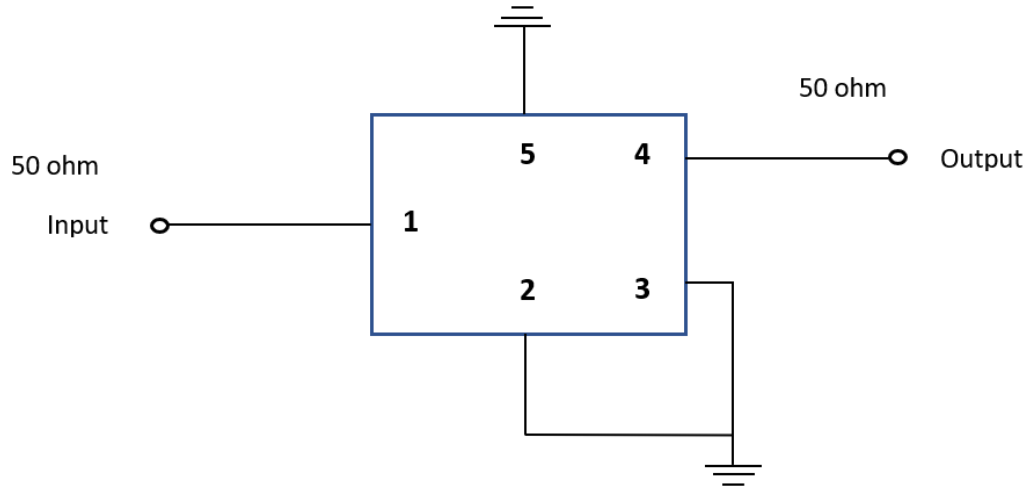
Connection	Terminal
Input	1
Output	4
Ground	2, 3, 5

 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

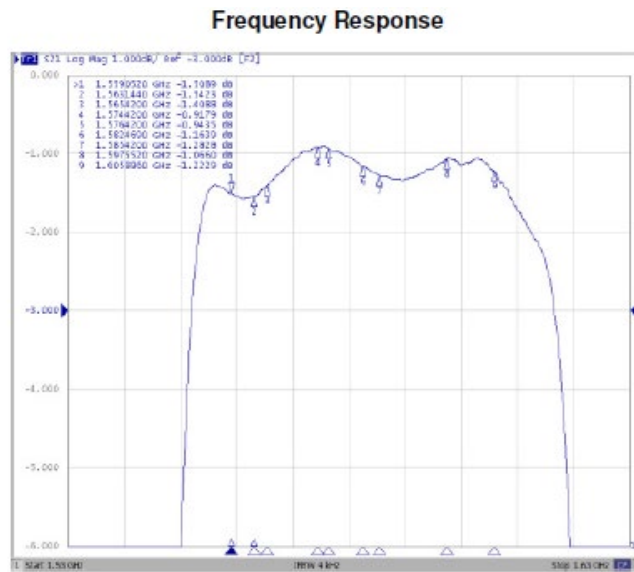
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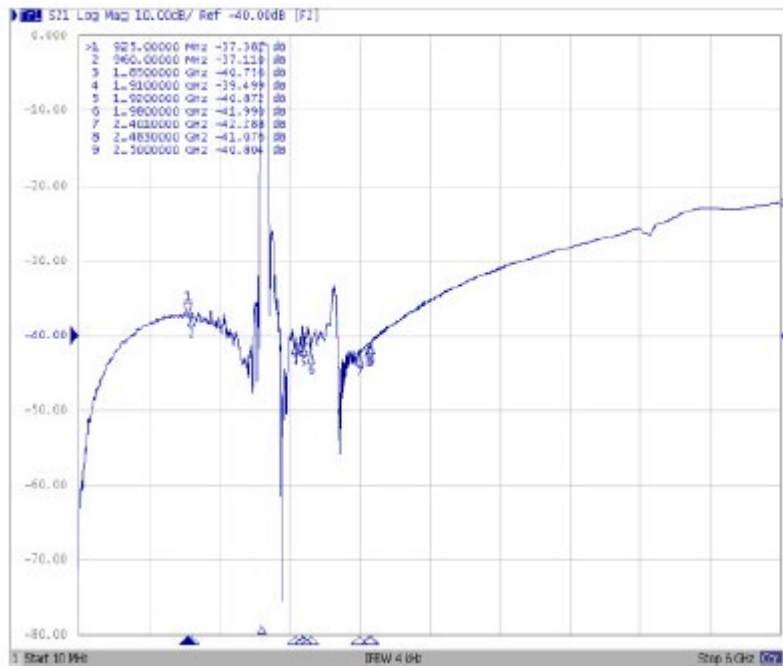
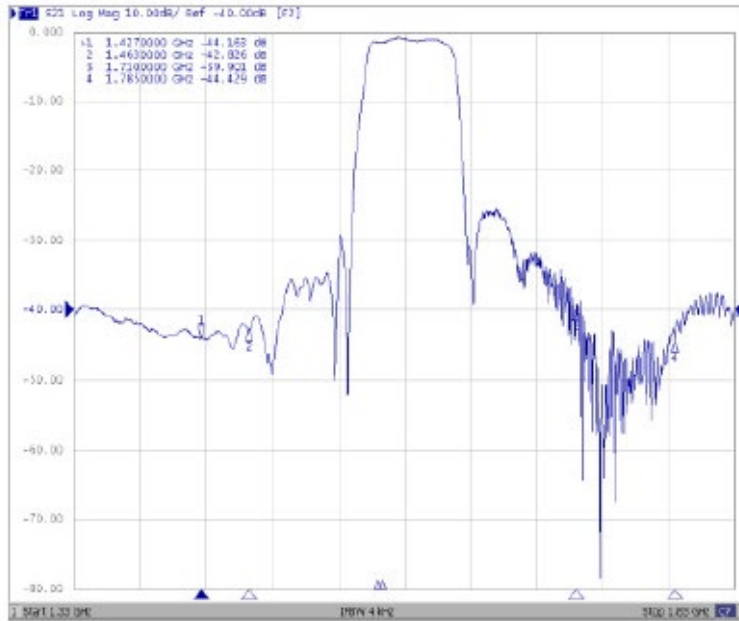
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

Filter Performance with Matching

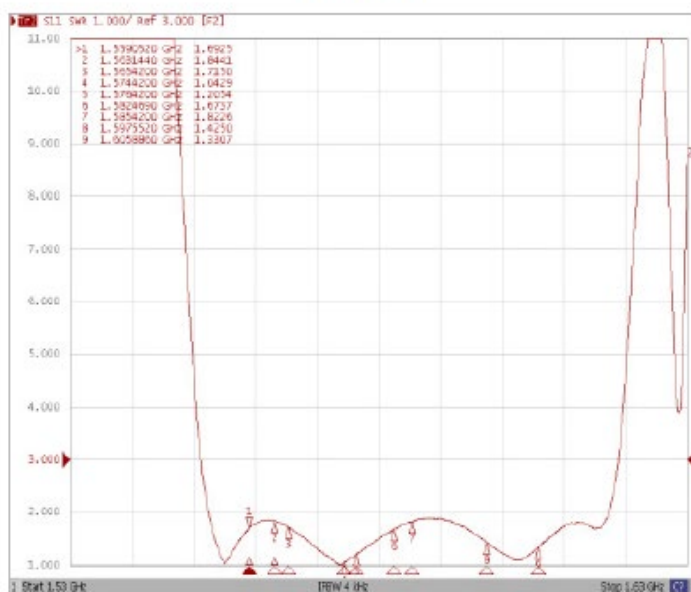


Frequency Characteristics

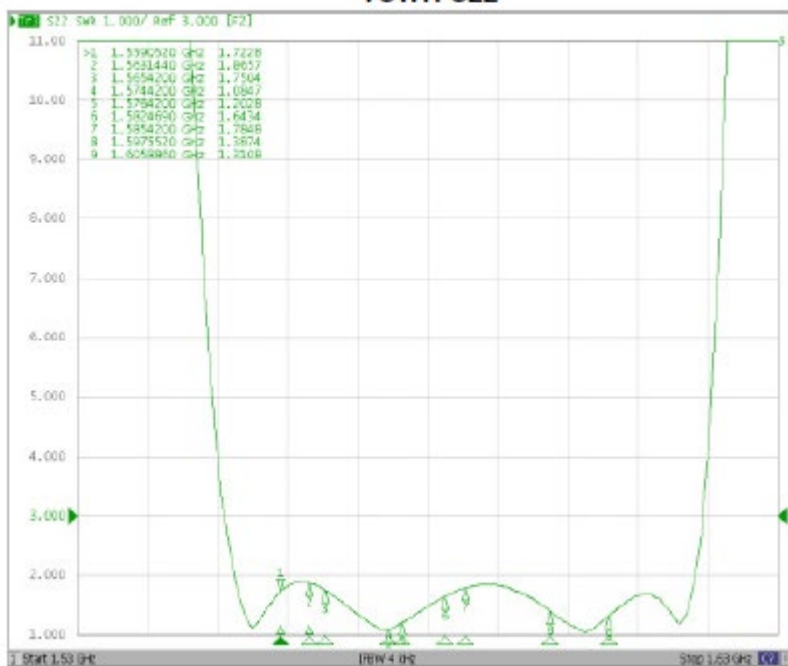




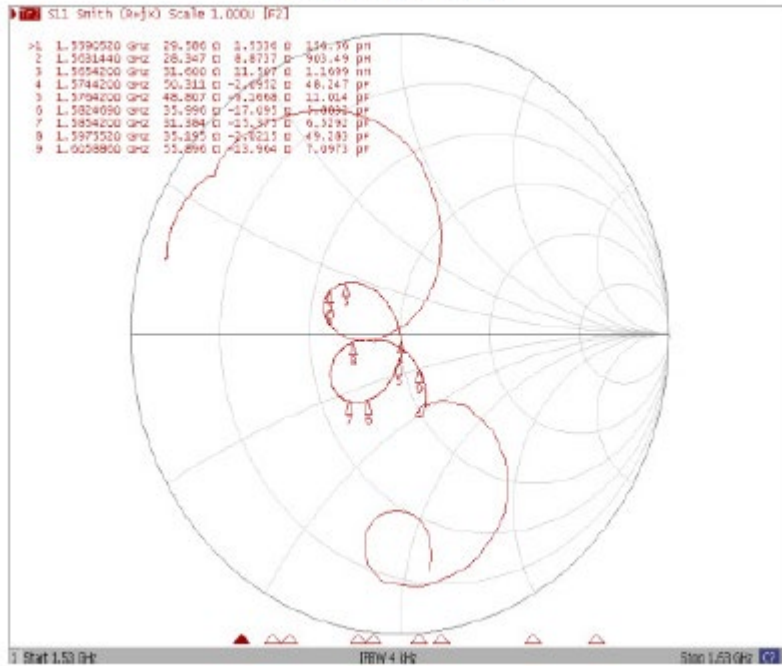
VSWR S11



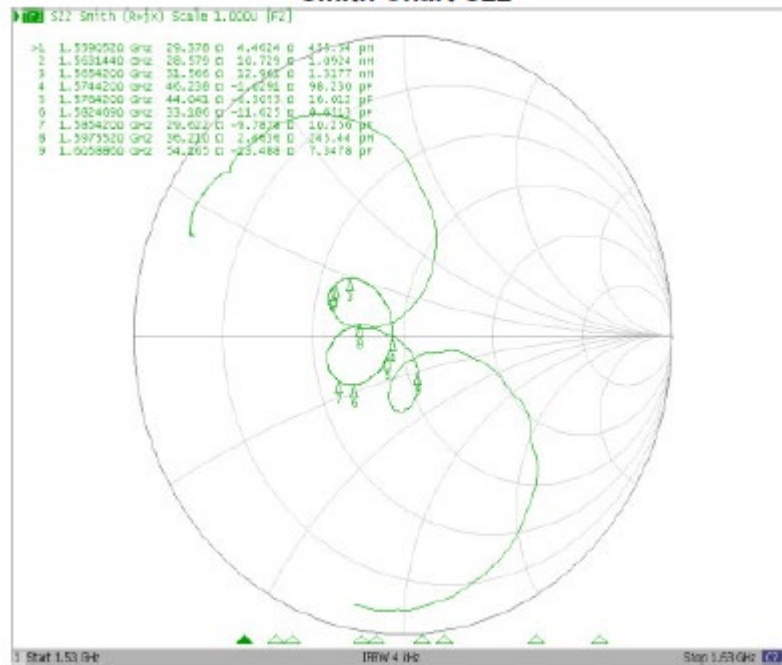
VSWR S22



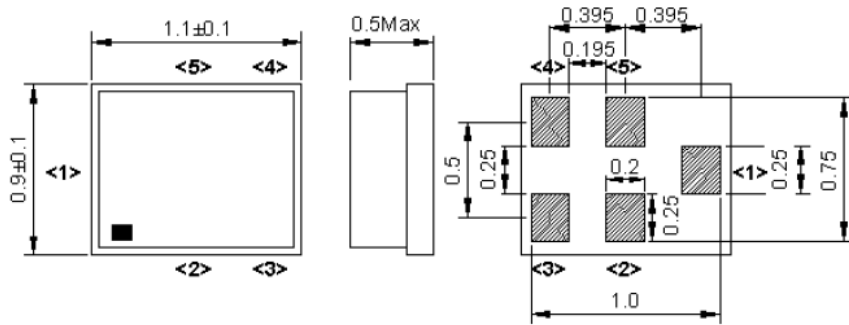
Smith Chart S11



Smith Chart S22



Outline Drawing



Pin Configuration

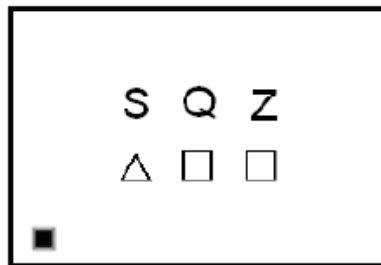
Not Specified Tolerance : +/-0.1 mm
Unit : m

Pin No.	Symbol	Function
1	IN	Unbalanced Input
2	GND	Ground
3	GND	Ground
4	OUT	Unbalanced Output
5	GND	Ground

Top View (Sample Production):



Top View (Mass Production):



△ : Date Code

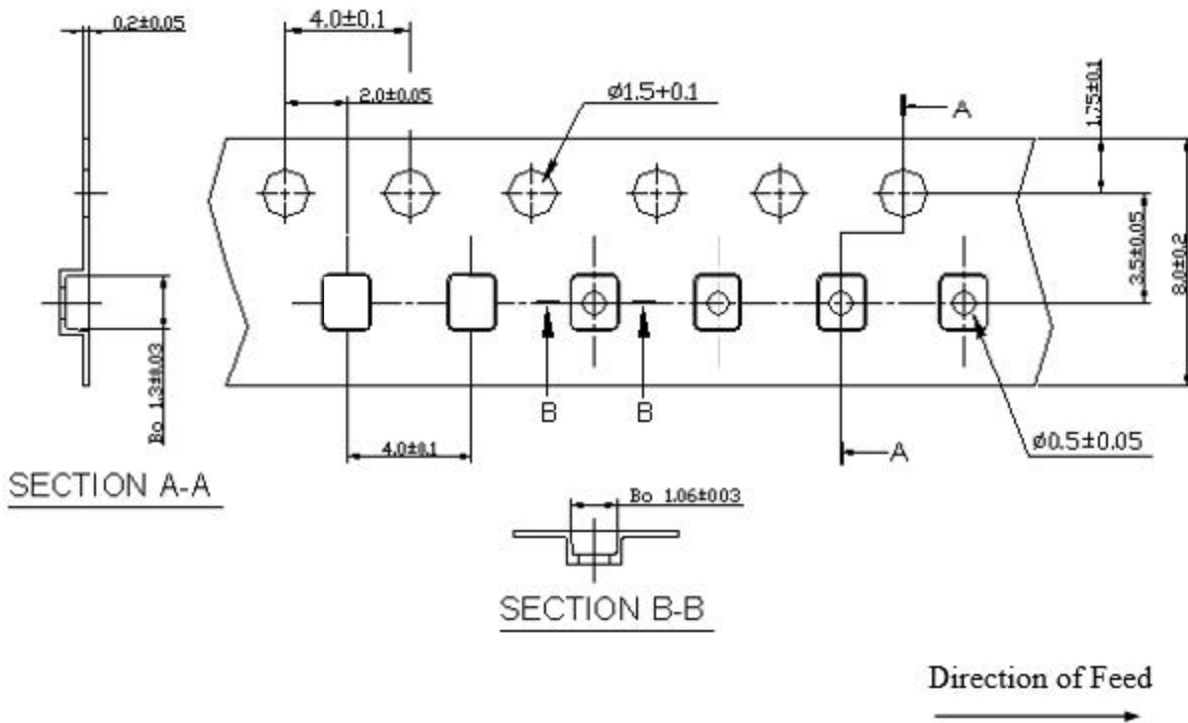
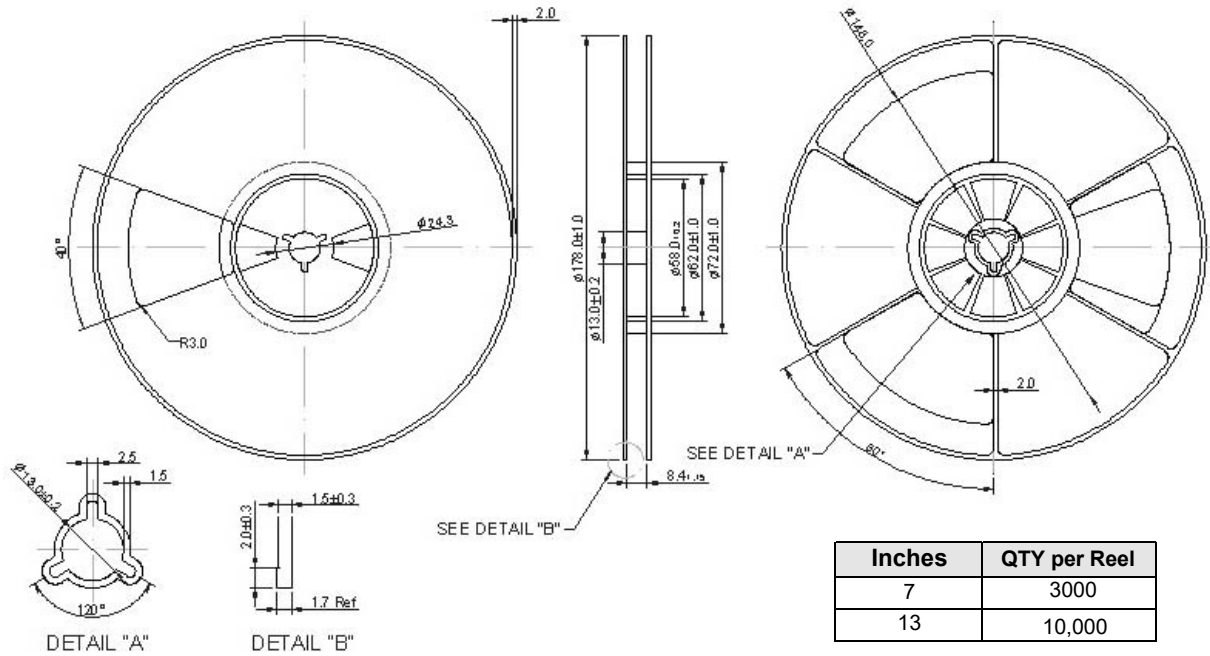
□ : Lot No. (Indicated by 0~9 or A to Z and a to z, except I, O, i, o and l)

Date Code: Follow below table. (4-year cycle)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019 / 2023	a	b	c	d	e	f	g	h	j	k	l	m
2020 / 2024	n	p	q	r	s	t	u	v	w	x	y	z
2021 / 2025	A	B	C	D	E	F	G	H	J	K	L	M
2022 / 2026	N	P	Q	R	S	T	U	V	W	X	Y	Z

Tape and Reel Specification

Tape and Reel Standard per ANSI/EIA-481



Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

